

**THE  
DOE RUN  
COMPANY**

Remediation Group

**Mark Nations**  
**Mining Properties Manager**  
**mnations@doerun.com**

December 11, 2013

Mr. Jason Gunter  
Remedial Project Manager  
U.S. Environmental Protection Agency  
Region 7 - Superfund Branch  
11201 Renner Blvd.  
Lenexa, KS 66219

**Re: The Doe Run Company - Leadwood Mine Tailings Site Monthly Progress Report**

Dear Mr. Gunter:

As required by Article VI, Section 50 of the Unilateral Administrative Order (Docket No. CERCLA-07-2006-0272) for the referenced project and on behalf of The Doe Run Company, the progress report for the period November 1, 2013 through November 30, 2013 is enclosed. If you have any questions or comments, please call me at 573-518-0800.

Sincerely,



Mark Nations  
Mining Properties Manager

Enclosures

c: Jason England – TDRC  
Mark Yingling – TDRC (electronic only)  
Matt Wohl – TDRC (electronic only)  
Robert Hinkson – MDNR  
Ty Morris – Barr Engineering



**Leadwood Mine Tailings Site**  
Leadwood, Missouri  
**Removal Action - Monthly Progress Report**  
Period: November 1, 2013 – November 30, 2013

**1. Actions Performed or Completed This Period:**

- a. None.

**2. Data and Results Received This Period:**

- a. During this period, water samples were collected from downstream of Leadwood Dam and the East Seep and Erosion Area, as well as from upstream and downstream of the confluence of Eaton Creek with Big River. The analytical results for this event are included with this progress report.
- b. During this period, the Ambient Air Monitoring Report for August 2013 was completed. Any issues identified in this report are discussed below. A copy of this document has been sent to your attention. The August 2013 Ambient Air Monitoring Report noted the following:
- The action levels for lead and dust were not exceeded.
  - No sample was taken on the Leadwood #2 (Office) TSP monitor on 08/01/13 due to an issue with the timer. Upon discovery, this issue was addressed.
  - No sample was taken on the Leadwood #2 (Office) PM<sub>10</sub> monitor on 08/05/13 due to a mechanical failure. Upon discovery, the ETI was replaced.
  - No sample was taken on the Leadwood #3 (School) PM<sub>10</sub> monitor on 08/11/13 due to a mechanical failure. Upon discovery, this issue was addressed.
  - There was a QA blank filter for the Leadwood #1 (Wortham) TSP and PM<sub>10</sub> monitors on 8/12/13.
  - No sample was taken on the Leadwood #3 (School) PM<sub>10</sub> monitor on 08/14/13 due to an electrical failure. Upon discovery, this issue was addressed.
  - No sample was taken on the Leadwood #2 (Office) PM<sub>10</sub> monitor on 08/23/13 due to an issue with the timer. Upon discovery, this issue was addressed.

**3. Scheduled Activities not Completed This Period:**

- a. None.

**4. Planned Activities for Next Period:**

- a. Continue vegetation maintenance activities. The use of biosolids will only be continued if a biosolids management plan has been submitted to and approved by EPA.
- b. Complete monthly water sampling activities as described in the Removal Action Work Plan.
- c. Complete air monitoring activities as described in the Removal Action Work Plan.

**5. Changes in Personnel:**

- a. None.

**6. Issues or Problems Arising This Period:**

- a. None.

**7. Resolution of Issues or Problems Arising This Period:**

- a. None.



Pace Analytical Services, Inc.  
9608 Loiret Blvd.  
Lenexa, KS 66219  
(913)599-5665

November 21, 2013

Amy Sanders  
The Doe Run Company  
P. O. Box 500  
Viburnum, MO 65566

RE: Project: NPDES (LEADWOOD)  
Pace Project No.: 60157551

Dear Amy Sanders:

Enclosed are the analytical results for sample(s) received by the laboratory on November 14, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jamie Church

jamie.church@pacelabs.com  
Project Manager

Enclosures



## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, Inc.



Pace Analytical Services, Inc.  
9608 Loiret Blvd.  
Lenexa, KS 66219  
(913)599-5665

## CERTIFICATIONS

Project: NPDES (LEADWOOD)  
Pace Project No.: 60157551

---

### Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219  
WY STR Certification #: 2456.01  
Arkansas Certification #: 13-012-0  
Illinois Certification #: 003097  
Iowa Certification #: 118  
Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055  
Nevada Certification #: KS000212008A  
Oklahoma Certification #: 9205/9935  
Texas Certification #: T104704407-13-4  
Utah Certification #: KS000212013-3  
Illinois Certification #: 003097

---

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, Inc..





## SAMPLE SUMMARY

Project: NPDES (LEADWOOD)  
Pace Project No.: 60157551

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60157551001	11110/LEADWOOD DOWNSTREAM	Water	11/12/13 12:59	11/14/13 08:15
60157551002	11111/LEADWOOD UPSTREAM	Water	11/12/13 13:23	11/14/13 08:15
60157551003	11112/LEADWOOD 001	Water	11/12/13 13:40	11/14/13 08:15
60157551004	11113/LEADWOOD 002	Water	11/12/13 14:03	11/14/13 08:15

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, Inc..



Pace Analytical Services, Inc.  
9608 Loiret Blvd.  
Lenexa, KS 66219  
(913)599-5665

### SAMPLE ANALYTE COUNT

Project: NPDES (LEADWOOD)  
Pace Project No.: 60157551

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60157551001	11110/LEADWOOD DOWNSTREAM	EPA 200.7	TDS	6	PASI-K
		EPA 200.7	TDS	3	PASI-K
		SM 2540D	RAH	1	PASI-K
		EPA 300.0	OL	1	PASI-K
60157551002	11111/LEADWOOD UPSTREAM	EPA 200.7	TDS	6	PASI-K
		EPA 200.7	TDS	3	PASI-K
		SM 2540D	RAH	1	PASI-K
		EPA 300.0	OL	1	PASI-K
60157551003	11112/LEADWOOD 001	EPA 200.7	TDS	3	PASI-K
		SM 2540D	RAH	1	PASI-K
		SM 2540F	RAH	1	PASI-K
		EPA 300.0	OL	1	PASI-K
60157551004	11113/LEADWOOD 002	EPA 200.7	TDS	3	PASI-K
		SM 2540D	RAH	1	PASI-K
		SM 2540F	RAH	1	PASI-K
		EPA 300.0	OL	1	PASI-K

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, Inc..



## ANALYTICAL RESULTS

Project: NPDES (LEADWOOD)

Pace Project No.: 60157551

**Sample:** 11110/LEADWOOD  
DOWNSTREAM **Lab ID:** 60157551001 **Collected:** 11/12/13 12:59 **Received:** 11/14/13 08:15 **Matrix:** Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b> Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Cadmium	ND	ug/L	5.0	2.5	1	11/15/13 14:00	11/19/13 10:50	7440-43-9	
Calcium	49000	ug/L	100	10.4	1	11/15/13 14:00	11/19/13 10:50	7440-70-2	
Lead	ND	ug/L	5.0	2.4	1	11/15/13 14:00	11/19/13 10:50	7439-92-1	
Magnesium	31200	ug/L	50.0	6.5	1	11/15/13 14:00	11/19/13 10:50	7439-95-4	
Total Hardness by 2340B	251000	ug/L	500		1	11/15/13 14:00	11/19/13 10:50		
Zinc	32.9J	ug/L	50.0	3.3	1	11/15/13 14:00	11/19/13 10:50	7440-66-6	
<b>200.7 Metals, Dissolved (LF)</b> Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Cadmium, Dissolved	ND	ug/L	5.0	2.5	1	11/19/13 17:00	11/20/13 14:11	7440-43-9	
Lead, Dissolved	2.5J	ug/L	5.0	2.4	1	11/19/13 17:00	11/20/13 14:11	7439-92-1	
Zinc, Dissolved	27.0J	ug/L	50.0	3.3	1	11/19/13 17:00	11/20/13 14:11	7440-66-6	
<b>2540D Total Suspended Solids</b> Analytical Method: SM 2540D									
Total Suspended Solids	ND	mg/L	5.0	5.0	1		11/15/13 10:30		
<b>300.0 IC Anions 28 Days</b> Analytical Method: EPA 300.0									
Sulfate	32.6	mg/L	5.0	0.80	5		11/17/13 12:04	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, Inc..



## ANALYTICAL RESULTS

Project: NPDES (LEADWOOD)  
Pace Project No.: 60157551

Sample: 11111/LEADWOOD UPSTREAM Lab ID: 60157551002 Collected: 11/12/13 13:23 Received: 11/14/13 08:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b> Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Cadmium	ND	ug/L	5.0	2.5	1	11/15/13 14:00	11/19/13 10:52	7440-43-9	
Calcium	42000	ug/L	100	10.4	1	11/15/13 14:00	11/19/13 10:52	7440-70-2	
Lead	ND	ug/L	5.0	2.4	1	11/15/13 14:00	11/19/13 10:52	7439-92-1	
Magnesium	27500	ug/L	50.0	6.5	1	11/15/13 14:00	11/19/13 10:52	7439-95-4	
Total Hardness by 2340B	218000	ug/L	500		1	11/15/13 14:00	11/19/13 10:52		
Zinc	ND	ug/L	50.0	3.3	1	11/15/13 14:00	11/19/13 10:52	7440-66-6	
<b>200.7 Metals, Dissolved (LF)</b> Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Cadmium, Dissolved	ND	ug/L	5.0	2.5	1	11/19/13 17:00	11/20/13 14:14	7440-43-9	
Lead, Dissolved	2.5J	ug/L	5.0	2.4	1	11/19/13 17:00	11/20/13 14:14	7439-92-1	
Zinc, Dissolved	ND	ug/L	50.0	3.3	1	11/19/13 17:00	11/20/13 14:14	7440-66-6	
<b>2540D Total Suspended Solids</b> Analytical Method: SM 2540D									
Total Suspended Solids	ND	mg/L	5.0	5.0	1		11/15/13 10:30		
<b>300.0 IC Anions 28 Days</b> Analytical Method: EPA 300.0									
Sulfate	17.5	mg/L	2.0	0.32	2		11/17/13 12:19	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, Inc..



## ANALYTICAL RESULTS

Project: NPDES (LEADWOOD)

Pace Project No.: 60157551

Sample: 11112/LEADWOOD 001      Lab ID: 60157551003      Collected: 11/12/13 13:40      Received: 11/14/13 08:15      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b> Analytical Method: EPA 200.7      Preparation Method: EPA 200.7									
Cadmium	4.6J	ug/L	5.0	2.5	1	11/15/13 14:00	11/19/13 10:54	7440-43-9	
Lead	3.1J	ug/L	5.0	2.4	1	11/15/13 14:00	11/19/13 10:54	7439-92-1	
Zinc	4110	ug/L	50.0	3.3	1	11/15/13 14:00	11/19/13 10:54	7440-66-6	
<b>2540D Total Suspended Solids</b> Analytical Method: SM 2540D									
Total Suspended Solids	ND	mg/L	5.0	5.0	1		11/15/13 10:30		
<b>2540F Total Settleable Solids</b> Analytical Method: SM 2540F									
Total Settleable Solids	ND	mL/L/hr	0.20	0.20	1		11/14/13 09:00		
<b>300.0 IC Anions 28 Days</b> Analytical Method: EPA 300.0									
Sulfate	532	mg/L	50.0	8.0	50		11/17/13 12:33	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, Inc..



## ANALYTICAL RESULTS

Project: NPDES (LEADWOOD)  
Pace Project No.: 60157551

Sample: 11113/LEADWOOD 002		Lab ID: 60157551004		Collected: 11/12/13 14:03		Received: 11/14/13 08:15		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7							
Cadmium	2.9J	ug/L	5.0	2.5	1	11/15/13 14:00	11/19/13 11:01	7440-43-9	
Lead	5.5	ug/L	5.0	2.4	1	11/15/13 14:00	11/19/13 11:01	7439-92-1	
Zinc	5670	ug/L	50.0	3.3	1	11/15/13 14:00	11/19/13 11:01	7440-66-6	
<b>2540D Total Suspended Solids</b>		Analytical Method: SM 2540D							
Total Suspended Solids	8.0	mg/L	5.0	5.0	1		11/15/13 10:30		
<b>2540F Total Settleable Solids</b>		Analytical Method: SM 2540F							
Total Settleable Solids	ND	mL/L/hr	0.20	0.20	1		11/14/13 09:00		
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Sulfate	525	mg/L	50.0	8.0	50		11/17/13 12:48	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, Inc..

### QUALITY CONTROL DATA

Project: NPDES (LEADWOOD)  
Pace Project No.: 60157551

QC Batch: MPRP/25154 Analysis Method: EPA 200.7  
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total  
Associated Lab Samples: 60157551001, 60157551002, 60157551003, 60157551004

METHOD BLANK: 1290119 Matrix: Water  
Associated Lab Samples: 60157551001, 60157551002, 60157551003, 60157551004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Cadmium	ug/L	ND	5.0	11/19/13 10:35	
Calcium	ug/L	ND	100	11/19/13 10:35	
Lead	ug/L	ND	5.0	11/19/13 10:35	
Magnesium	ug/L	ND	50.0	11/19/13 10:35	
Total Hardness by 2340B	ug/L	ND	500	11/19/13 10:35	
Zinc	ug/L	ND	50.0	11/19/13 10:35	

LABORATORY CONTROL SAMPLE: 1290120

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cadmium	ug/L	1000	1010	101	85-115	
Calcium	ug/L	10000	9560	96	85-115	
Lead	ug/L	1000	1020	102	85-115	
Magnesium	ug/L	10000	9950	99	85-115	
Total Hardness by 2340B	ug/L		64800			
Zinc	ug/L	1000	999	100	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1290121 1290122

Parameter	Units	60157550001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cadmium	ug/L	ND	1000	1000	1030	1060	103	106	70-130	3	10	
Calcium	ug/L	102000	10000	10000	105000	106000	21	37	70-130	2	9 M1	
Lead	ug/L	6.1	1000	1000	1010	1050	101	104	70-130	3	10	
Magnesium	ug/L	45100	10000	10000	51900	53400	68	84	70-130	3	9 M1	
Total Hardness by 2340B	ug/L	441000			475000	485000				2		
Zinc	ug/L	2800	1000	1000	3570	3730	76	93	70-130	4	11	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, Inc..





### QUALITY CONTROL DATA

Project: NPDES (LEADWOOD)  
Pace Project No.: 60157551

QC Batch: MPRP/25207 Analysis Method: EPA 200.7  
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Dissolved  
Associated Lab Samples: 60157551001, 60157551002

METHOD BLANK: 1292227 Matrix: Water  
Associated Lab Samples: 60157551001, 60157551002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Cadmium, Dissolved	ug/L	ND	5.0	11/20/13 14:02	
Lead, Dissolved	ug/L	ND	5.0	11/20/13 14:02	
Zinc, Dissolved	ug/L	ND	50.0	11/20/13 14:02	

LABORATORY CONTROL SAMPLE: 1292228

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cadmium, Dissolved	ug/L	1000	969	97	85-115	
Lead, Dissolved	ug/L	1000	1000	100	85-115	
Zinc, Dissolved	ug/L	1000	949	95	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1292229 1292230

Parameter	Units	60157800001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
Cadmium, Dissolved	ug/L	ND	5000	5000	5000	4960	100	99	70-130	1	10
Lead, Dissolved	ug/L	80.0	5000	5000	4550	4530	89	89	70-130	0	10
Zinc, Dissolved	ug/L	9970	5000	5000	13600	12700	74	55	70-130	7	11 M1

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, Inc..



### QUALITY CONTROL DATA

Project: NPDES (LEADWOOD)  
Pace Project No.: 60157551

QC Batch: WET/44584 Analysis Method: SM 2540D  
QC Batch Method: SM 2540D Analysis Description: 2540D Total Suspended Solids  
Associated Lab Samples: 60157551001, 60157551002, 60157551003, 60157551004

METHOD BLANK: 1289940 Matrix: Water  
Associated Lab Samples: 60157551001, 60157551002, 60157551003, 60157551004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	11/15/13 10:27	

SAMPLE DUPLICATE: 1289941

Parameter	Units	60157554001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	ND	ND		25	

SAMPLE DUPLICATE: 1289942

Parameter	Units	60157499011 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	17.0	15.0	12	25	

### REPORT OF LABORATORY ANALYSIS

### QUALITY CONTROL DATA

Project: NPDES (LEADWOOD)  
Pace Project No.: 60157551

QC Batch: WETA/27129 Analysis Method: EPA 300.0  
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions  
Associated Lab Samples: 60157551001, 60157551002, 60157551003, 60157551004

METHOD BLANK: 1291783 Matrix: Water  
Associated Lab Samples: 60157551001, 60157551002, 60157551003, 60157551004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfate	mg/L	ND	1.0	11/17/13 08:57	

LABORATORY CONTROL SAMPLE: 1291784

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	5	5.0	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1290057 1290058

Parameter	Units	60157449001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
Sulfate	mg/L	206	100	100	299	302	93	97	80-120	1 15	

MATRIX SPIKE SAMPLE: 1290059

Parameter	Units	60157449002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	232	100	328	96	80-120	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, Inc..

## QUALIFIERS

Project: NPDES (LEADWOOD)

Pace Project No.: 60157551

### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### LABORATORIES

PASI-K Pace Analytical Services - Kansas City

### ANALYTE QUALIFIERS

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, Inc..

### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: NPDES (LEADWOOD)  
Pace Project No.: 60157551

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60157551001	11110/LEADWOOD DOWNSTREAM	EPA 200.7	MPRP/25154	EPA 200.7	ICP/19424
60157551002	11111/LEADWOOD UPSTREAM	EPA 200.7	MPRP/25154	EPA 200.7	ICP/19424
60157551003	11112/LEADWOOD 001	EPA 200.7	MPRP/25154	EPA 200.7	ICP/19424
60157551004	11113/LEADWOOD 002	EPA 200.7	MPRP/25154	EPA 200.7	ICP/19424
60157551001	11110/LEADWOOD DOWNSTREAM	EPA 200.7	MPRP/25207	EPA 200.7	ICP/19449
60157551002	11111/LEADWOOD UPSTREAM	EPA 200.7	MPRP/25207	EPA 200.7	ICP/19449
60157551001	11110/LEADWOOD DOWNSTREAM	SM 2540D	WET/44584		
60157551002	11111/LEADWOOD UPSTREAM	SM 2540D	WET/44584		
60157551003	11112/LEADWOOD 001	SM 2540D	WET/44584		
60157551004	11113/LEADWOOD 002	SM 2540D	WET/44584		
60157551003	11112/LEADWOOD 001	SM 2540F	WET/44523		
60157551004	11113/LEADWOOD 002	SM 2540F	WET/44523		
60157551001	11110/LEADWOOD DOWNSTREAM	EPA 300.0	WETA/27129		
60157551002	11111/LEADWOOD UPSTREAM	EPA 300.0	WETA/27129		
60157551003	11112/LEADWOOD 001	EPA 300.0	WETA/27129		
60157551004	11113/LEADWOOD 002	EPA 300.0	WETA/27129		

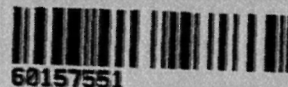
### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, Inc..



## Sample Condition Upon Receipt

WO#: 60157551



60157551

Client Name: Doc RunCourier: Fed Ex ☒ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other ☐Tracking #: 797146195330Pace Shipping Label Used? Yes ☐ No ☒Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☐ Other N2PLThermometer Used: T-238 / T-194Type of Ice: Wet Blue ☐ None ☐ Samples received on ice, cooling process has begun.  
(circle one)Cooler Temperature: 1.2Date and initials of person examining contents: 2/1/14

Temperature should be above freezing to 6°C

Chain of Custody present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody filled out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler name & signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples arrived within holding time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Short Hold Time analyses (<72hr):	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6. <u>Se H Sol</u>
Rush Turn Around Time requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Pace containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
Containers intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Unpreserved 5035A soils frozen w/in 48hrs?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.
Filtered volume received for dissolved tests?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	12.
Sample labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Includes date/time/ID/analyses	Matrix: <u>WT</u>	13.
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	14.
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed
Trip Blank present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	Lot # of added preservative
Pace Trip Blank lot # (if purchased):		15.
Headspace in VOA vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.
Project sampled in USDA Regulated Area:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	17. List State:

Client Notification/ Resolution:

Copy COC to Client? Y / N

Field Data Required? Y / N

Person Contacted: \_\_\_\_\_

Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_

Project Manager Review: \_\_\_\_\_

Date: \_\_\_\_\_



# CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

## Section A

### Required Client Information:

Company: The Doe Run Company

Address: PO Box 500

Email To: asanders@doerun.com

Phone: (573) 689-4535

Fax: (573) 244-8179

Requested Due Date/TAT: 5 To 7 Days

## Section B

### Required Project Information:

Report To: Amy Sanders

Copy To:

Purchase Order No.:

Project Name: NPDES (Leadwood)

Project Number:

## Section C

### Invoice Information:

Attention: Amy Sanders

Company Name: The Doe Run Company

Address: PO Box 500, Viburnum, MO 65688

Phone:

Reference:

Project Manager:

Price Profile #:

## REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER

☐ UST ☐ RCRA

Site Location:

MO

STATE:

Page: 1 of 1

COC#: 220

Requested Analysis Filtered (Y/N)

ITEM #	Section C Required Sample Information		Valid Matrix Codes		MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE/TIME				SAMPLE TEMP AT COLLECTION	Bottles / Preservatives								*See Additional Comments Below  Analysis Test ↓	SEMO Lab Project No. / Lab ID.
	MATRIX	CODE	COMPOSITE START	COMPOSITE END / GRAB			Total # OF CONTAINERS	250 mL Unpreserved	500 mL Unpreserved	1 L Unpreserved		250 mL Nitric	250 mL Amber Glass H <sub>2</sub> SO <sub>4</sub>	250 mL Plastic H <sub>2</sub> SO <sub>4</sub>	1000 mL Amber HCl	250 mL ZnAc/NaOH	500 mL Amber Glass H <sub>2</sub> SO <sub>4</sub>				
																		DATE (mm/dd/yy)	TIME (Military)		
1	11110	BP2U, BP3N	WW	G			11/12/13	1249	2	1	1							CD-D, PB-D, ZN-D, HARD, SO4, CD-T, PB-T, TSS-T, ZN-T	Leadwood Downstream		
2																					
3	11111	↓ ↓	WW	G			11/12/13	1323	2	1	1							CD-D, PB-D, ZN-D, HARD, SO4, CD-T, PB-T, TSS-T, ZN-T	Leadwood Upstream		
4																					
5	11112	BP1U, BP3U, ↓	WW	G			11/12/13	1340	3	1	1	1						SO4, SS, TSS, CD-T, PB-T, ZN-T	Leadwood 001		
6																					
7	11113	↓ ↓ ↓	WW	G			11/12/13	1403	3	1	1	1						SO4, SS, TSS, CD-T, PB-T, ZN-T	Leadwood 002		
8																					
9																					
10																					
11																					
12																					
13																					
14																					
15																					
16																					
17																					
18																					
19																					
20																					
21																					
22																					
23																					
24																					
25																					
26																					
27																					
28																					
29																					
30																					

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME (Military)	ACCEPTED BY / AFFILIATION	DATE	TIME (Military)	SAMPLE CONDITIONS			
*200.7 Total Recoverable and Dissolved Metals	Larry Hopkins Sampler	11/13/13	1150	John McGraw	11/14	215	1.2		Y	Y

SAMPLER NAME AND SIGNATURE		Temp in °C	pH in SU	Received on Ice (Y/N)	Custody Sealant Color (Y/N)
PRINT Name of SAMPLER:	SIGNATURE of SAMPLER:				
Larry Hopkins					

DATE Signed (MM/DD/YY):
11/13/13